

## REMARKS

Claims 1-9 and 11-15 were pending and have been rejected.

Claims 1 and 6 are amended.

Claims 16 and 17 are new.

Claims 1-9 and 11-17 are pending.

### **Amended Claims 1 and 6**

Claims 1 and 6 are amended to require that R<sub>8</sub> and R<sub>9</sub> are C<sub>1</sub>-C<sub>4</sub> alkyl.

### **New claims 16 and 17**

New claim 16 is supported by the disclosure on page 10, last paragraph through lines 1-2 on page 11.

New claim 17 is supported by the disclosure on page 2, lines 27-28.

No new matter is added.

### **35 USC 102(b)**

Examiner has rejected 1-3, 5-8 and 13-14 under 35 USC 102(b) as being anticipated by Robinson, EP247,774, for reasons set forth in the previous office action filed 07/30/2008.

Examiner does not agree that the addition of a cosmetically functional ingredient as limiting in that any ingredient used in cosmetic compositions meets the limitation. Robinson teaches the use of surfactants in the water-in-oil emulsions. A surfactant is common in cosmetic compositions. We could amend to include ingredients such as perfume which would distinguish over Robinson.

Applicants have amended claim 1 to direct the claims to a thickener for water and /or oil based personal care compositions. There is no suggestion or teaching within the bounds of Robinson to use the described copolymer to thicken water and/or oil based personal care compositions. Accordingly, there can be no anticipation by Robinson.

### **35 USC 103(a)**

Claims 1-9 and 11-15 are rejected under 35 USC 103(a) as being unpatentable over Green, US 6,365,656 in view of Cockcroft, WO 02/40622 in view of Lentini, Us 5,665,368, for the reasons set forth in the previous office actions filed 01/11/2008 and 07/30/2008.

Green does not disclose the use of substituted acrylamides as in monomer II.

Cockcroft however does disclose cationic polymers useful in personal care which do include N,N-dimethyl acrylamide and N-alkyl substituted acrylamides (see page 4, lines 4-6). Thus according to the examiner it would be *prima facie* obvious to replace an acrylamide with a functional equivalent N,N-dimethyl acrylamide in the cationic polymers disclosed in Green.

There are several problems with this combination of references. Cockcroft is directed to high solids **solutions** of cationic copolymer in personal care formulations. The Cockcroft invention concerns an aqueous solution of a cationic copolymer with molecular weight in the range 30,000 to 300,000, having a concentration of between 20-50% by weight active polymer, wherein the solution has a viscosity of less than 10,000 cP at 25 degrees Celsius" (page 2, forth paragraph).

Green teaches in Col. 1, lines 55-66:

At the same time the hydrophilic polymer expands on exposure to water but does not dissolve, resulting in a smooth and rapid viscosity increase. Typically the polymer particles swell to give a microparticulate thickening system comprising polymer particles having a typical particle size in the range of 2.5-5 microns in diameter.

The polymers of Cockcroft are required to be soluble in solution at 20-50% concentration. The polymers of Green are particulate in nature, and typically work to increase compositional viscosity by **not dissolving** in water but instead by polymer expansion resulting in a smooth and rapid viscosity increase. Thus it does not make sense to rely on Cockcroft's suggestions as to the incorporation of nonionic monomers such as N,N-dimethyl acrylamide as Cockcroft teaches water soluble polymers while Green teaches particulates which do not dissolve in water but expand to viscosify, in fact rely on their insolubility in water.

If one skilled in the art is merely selecting various components (such as N, N-alkylacryamide) and replacing known equivalents (acrylamide) as alleged by the examiner to give completely expected results then the substitution would be obvious. However, Green forms particulates which do not

dissolve in solution. As taught by Green, this attribute is important (Col. 1, lines 55-66). Cockcroft forms high concentrations (20-50 wt. %) of aqueous solutions of polymers.

One skilled in the art would not be motivated or directed by Green to look to Cockcroft to replace the acrylamide taught by Green with N,N-alkylacrylamide taught by Cockcroft. This is especially true in regard to claim 9, which requires dimethylacrylamide (one suggestion by Cockcroft among many proposed nonionic monomers) and crosslinker in amounts ranging from 100-300 ppm. One skilled in the art would not expect the suggested nonionic monomers in Cockcroft which are used to form high solid aqueous solutions and are uncrosslinked would be applicable to the invention of Green as the two inventions are characterized by completely different solubility characteristics.

The examiner has kindly explained that the secondary reference Cockcroft was used only for its disclosure within on substituted N,N-dimethyl acrylamides and the reference does not have to teach all of applicants claimed limitations on its own merit. Since the N, N-dimethyl acrylamides Cockcroft are structurally very similar to the methacrylamides of Green one of ordinary skill in the art would have a reasonable expectation of success in making such a substitution. Nevertheless, there must be some direction given by either reference to make the substitution. Apparently examiner believes the structural similarity is sufficient. The applicants respectfully disagree. There is no suggestion within Green to make the substitution the examiner suggests. Cockcroft teaches N-alkyl substituted acrylamides as one of many possible nonionic components of a water soluble copolymer. Green is directed to particulate type polymers which expand in water (are not soluble). The applicants respectfully submit that looking to Cockcroft for modification of Green does not make a lot of sense as each invention is characterized by quite different solubility attributes.

There is also one very significant advantage in using N,N-dimethylacrylamide in place of acrylamide in the method presently claimed. Green has not recognized this advantage. That is acrylamide and N,N-dimethylacrylamide are formed by distinctly different methods. The preparation of N,N-dimethylacrylamide does not give rise to residuals of acrylamide. Thus there is no residual acrylamide in polymers formed from a cationic monomer of formula (I) and a monomer for formula (II), wherein R8 and R9 are C1-C4-alkyl. This is important advantage in any composition used for personal care products.

Reconsideration and withdrawal of the rejection of claims 1-9 and 11-17 is respectfully solicited in light of the remarks and amendments *supra*.

Since there are no other grounds of objection or rejection, passage of this application to issue with claims 1-9 and 11-17 is earnestly solicited.

Applicants submit that the present application is in condition for allowance. In the event that minor amendments will further prosecution, Applicants request that the examiner contact the undersigned representative.

Respectfully submitted,



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Enclosure: Request for Continued Examination